

Tender for Supply of Digital Radio and Cabinet for SCADA Network



MR 111/2020

**Supply of Digital Radio and Cabinet for SCADA
Network**

PUBLICITY

NO PUBLICITY OR DETAILS ABOUT THIS PROJECT ARE TO BE DISCLOSED BY ANY BIDDER OR ANY OTHER ASSOCIATED PARTY WITHOUT THE WRITTEN PERMISSION OF EFL PRIOR TO, DURING OR AFTER THE PROJECT IS AWARDED. IN GENERAL ANY PUBLICITY OR MEDIA ENQUERIES WILL BE DEALT WITH BY EFL.

ALL THOSE WHO REQUEST TO UPLIFT A COPY OF THIS TENDER HAVE AGREED NOT TO DISCLOSURE ANY INFORMATION REGARDING THIS TENDER.

Glossary

- i. EFL – Energy Fiji Limited
- ii. CBM – stands for "cubic meter" in shipping. This measurement is calculated by multiplying the width, height and length together of one's carton.
- iii. DIFOTIS - Delivery in Full on Time in Spec
- iv. VAT – Value Added Tax
- v. VIP – VAT Inclusive Price
- vi. SBA – Strategic Business Area

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1. Introduction

1.1. The Company - EFL

Energy Fiji Limited is a government entity solely responsible for supplying power throughout the Fiji Islands. Power is supplied through Hydro, Diesel and wind mill generators located in different parts of Fiji.

The operations of the company are organized into three geographically defined divisions, which correspond to the national administrative divisions. These divisions are:

- Central Eastern Division based in the capital Suva
 - Suva, Lami, Navua, Tailevu, Levuka and part of the Coral Coast
- Western/Northern Division based in Lautoka
 - Lautoka, Tavua, Ba, Sigatoka, Vatukoula, Northern Division (Labasa, Savusavu, Taveuni)

EFL provides electricity services to most parts of the country especially in the Viti Levu and Vanua Levu area and its electricity grid is shown in the map below.

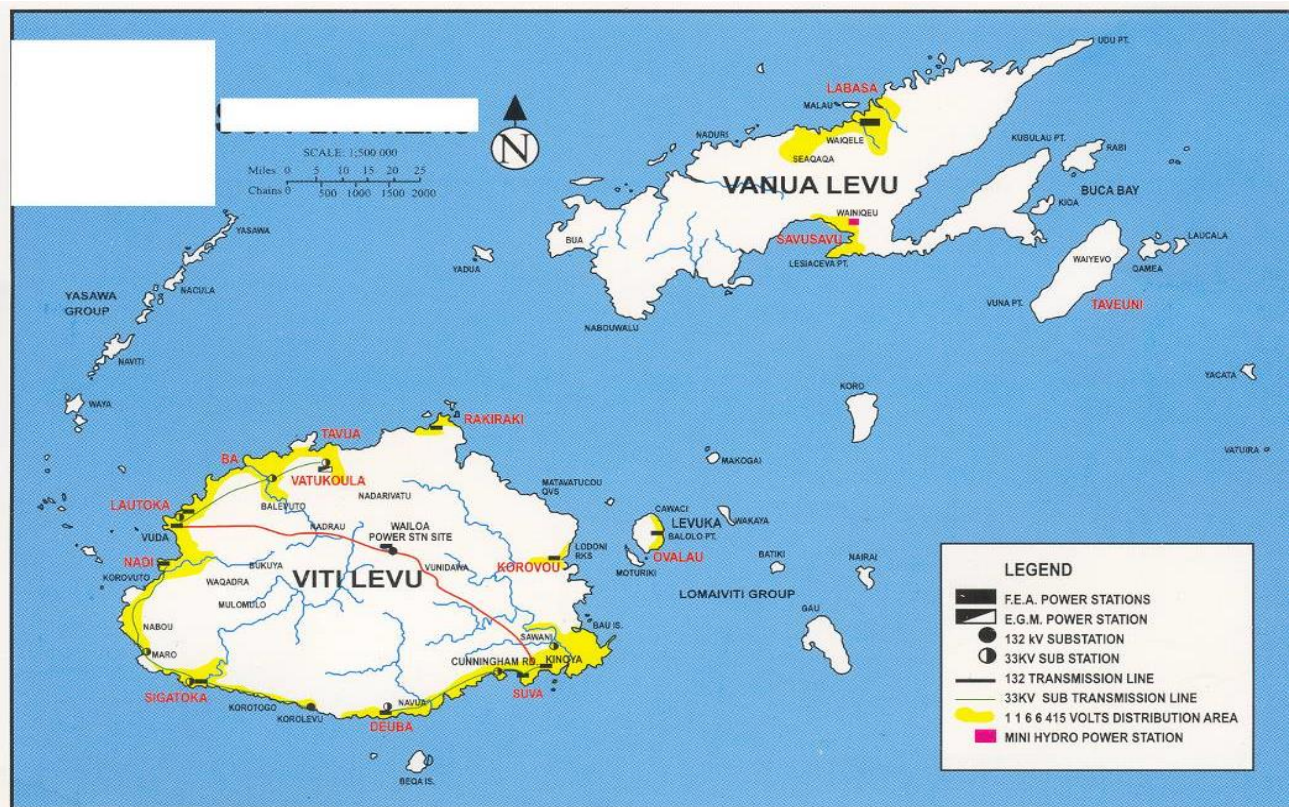


Figure 1 – Energy Fiji Limited coverage Area

EFL's official website is www.efl.com.fj.

2. Purpose and description of Tender

Energy Fiji Limited plans to replace the existing VHF & UHF radios at the following sites: Vuda, Lololo, Taladrau, Tuidreke, Nakobalevu, Dogowale, Kavukavu and Butoni.

The replacement of existing VHF & UHF radios is intended for:

- Better reliability – the existing equipment is at the end of the life cycle;
- Better bandwidth.

3. Scope

Project scope are as follows:

- Supply all radio equipment, both UHF link (PTP) and VHF radio (P2MP).
- Supply of 19inch 45RU Rittal Cabinet.

4. General

- 1) The submitted tender documentation together with submitted technical documentation shall be neatly sorted in adequate sections and bound.
- 2) The response to the specification is required to be comprehensive with a completed Compliance table as set out below.
- 3) Tenderers are encouraged to offer the existing baseline products that are compliant with or equivalent to all mandatory requirements.
- 4) The offered system shall have at least the same or better technical characteristics as requested in this tender.
- 5) The Compliance table included in each chapter of this document provides an entry for each requirement.
- 6) The Tenderer shall also provide additional remarks if they are considered helpful for assessing the response (column Remarks in the Compliance table). Each remark shall be uniquely referred to corresponding document (Chapter, Paragraph).
- 7) The Tenderer compliance status shall be indicated against each paragraph of this specification in the 'Compliance' column with a Yes for Compliance or a No for Non-Compliance. No other response shall be recognized during the evaluation and absence of Yes or No shall be counted as Not Compliant.
- 8) The Tenderer shall provide the proof/explanation of every indicated Yes - Compliance in the 'Compliance' column. Additionally, where the answer can be found in the submitted documentation, the Tenderer shall provide the reference and point to the specific line/paragraph/chapter/document where the compliance status can be verified.

5. Reference Documents

Wherever reference is made in this technical specification to specific regulations, standards and codes, the provisions of the latest current edition or revision of the relevant regulations, standards or codes in effect shall apply unless otherwise expressly stated in the technical specifications. Where

such standards and codes are national or related to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

6. Standards

- a) The whole supplied equipment shall work completely in Compliance with the following documents:

EMC: FCC CFR47 Part 15, EN 301 489-5, ICES-003

SAFETY: UL/EN 60950, CLASS 1 division 2 for hazardous locations

ENVIRONMENTAL: ETS 300 019 Class 3, 4, IEE 1613 Class 2
IEC 61850-3, Ingress Protection IPS1

RF: FCC CFR47 Part 24/27/80/90/95/101
IC RSS 119/RSS 134

BAND	FCC ID:	IC
135	UIPSQ135M150	6772A-SQ135M150
400	UIPSQ400M1311	6772A-SQ400M1311

- b) The equipment shall also meet the following standards for electrical safety:
IEC 60950 - International Safety Standard for Information Technology Equipment
EN 60215 - Safety of Radio Frequency Transmitters
- c) The radio equipment shall be newly-produced and shall meet the requirements laid down in standard documents listed in a) above.

7. Definitions

Term/Phrase	Definition
Availability	A measure of the degree to which an item is in an operable state at any time.
Reliability	The probability that an item will perform its intended function for a specified interval under stated conditions.
Maintainability	A measure of the ability of an item to be retained in, or restored to, a specified condition when maintenance is performed using prescribed procedures and technician skill levels.
Consumable spare	Expendable item, such as fuses, lamps, air filters, etc., that can be easily replaced by use of standard tools and procedures.

8. Abbreviations

Term/Phrase	Definition
AC	Alternating current
DT	Delivery Time. Defined as the time elapsed between the date of order of a part by the Contracting authority (in case of need of the order of additional spare parts) and the date of shipment of ordered part from the Contractor to the Contracting Authority
DC	Direct Current
EMP	Electromagnetic pulse
LAN	Local Area Network
LRU	Line Replaceable Unit that is repairable and shall: <ul style="list-style-type: none"> • Be easily accessible and replaceable (e.g. plug in unit, screwed terminals or connectors); • Have minimal adjustment requirements (e.g. voltage level setting, etc) • Be designed in such a way to ensure that the system returns to its full operational status within a meantime of 60 minutes (MTTR < 1 hour) when only LRU has failed
MDF	Main Distribution Frame
MRT	Mean Response Time in hours (i.e. the average time from notification of failure for a technician to be ready to commence repair action)
MTBF	Mean Time Between Failures. A basic measure of reliability for repairable items. The average time during which all parts of the item perform within their specified limits, during a particular measurement period under stated conditions.
MTTR	Mean Time To Repair. A basic measure of maintainability. The sum of corrective maintenance times divided by the total number of failures within an item. The average time it takes to fully repair a failed system. Typically includes fault isolation, remove and replacement of failed item(s) and checkout. It excludes logistics downtime needed for spare part transport from stock to the site.
RF	Radio Frequency
Rx	Receiver
TAT	Turn-Around-Time. The time elapsed between the date of arrival of the faulty item at repair workshop and the date of shipment of the repaired (or replaced) item from the repair workshop to the Contracting authority
TRx	Transmitter

Term/Phrase	Definition
UHF	Ultra High Frequency
VHF	Very High Frequency
VSWR	Voltage Standing Wave Ratio

9. Functional and Technical Requirements

ID #	Requirements	Compliance YES/NO – references to evidence
1	The Tenderer shall be responsible for the system engineering efforts associated with the production and supply of the equipment being provided.	
2	The Tenderer shall be responsible for the safe delivery of the items to the mentioned location in the tender.	

10. OVERVIEW OF CURRENT RADIO SYSTEM

EFL currently operates an analogue SCADA radio system installed at various repeater sites to monitor Autorecloser system installed at various locations around the electricity grid.

The system consist of data radios for both point to point and Point to Multipoint links. Figure 2 below shows the existing setup and the frequency used for both point to point and point to multipoint is tabulated in the table below.

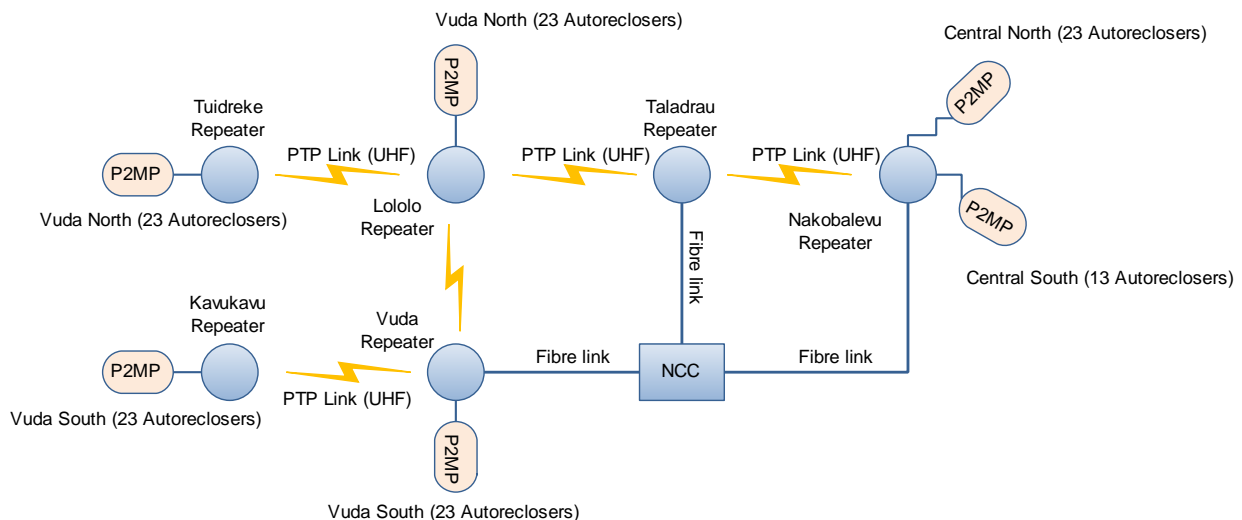


Figure 2 – Existing SCADA Radio setup.

Vuda		Lololo				Taladrau				Nakobalevu				Dogowale					
Tx	440.275	→	446.275	Rx	Tx	448.1625	→	442.1625	Rx	Tx	442.1375	→	448.1375	Rx	Tx	446.6875	→	Rx	440.6875
Rx	446.275	←	440.275	Tx	Rx	442.1625	←	448.1625	Tx	Rx	448.1375	←	442.1375	Tx	Rx	440.6875	←	Tx	446.6875
Vuda		Lololo				Tuidreke													
Tx	440.3375	→	446.3375	Rx	Tx	446.4125	→	440.4125	Rx										
Rx	446.3375	←	440.3375	Tx	Rx	440.4125	←	446.4125	Tx										

Figure 3 – Link Frequencies

Freq	Lololo	Tuidreke	Kavukavu	Nakobalevu		Dogowale
Tx	166.775	172.9875	172.9875	166.8625	172.6125	166.7375
RX	172.775	166.9875	166.9875	172.8625	166.6125	172.7375

Figure 4: Point to Multipoint Frequencies

11. Repeater Site Coordinates

Site information on where repeaters are located is tabulated below.

	Repeater	Longitude	Latitude	Tower Structure	Tower Height (m)	Power Supply
1	Vuda	17 40 40.78 S	177 26 03.16 E	Free standing	20	12VDC
2	Lololo	17 33 53.89 S	177 36 46.78 E	Free standing	35	12VDC
3	Taladrau	17 45 10.41 S	178 04 21.73 E	Free standing	23	12VDC
4	Nakobalevu	18 03 38.00 S	178 24 59.00 E	Free standing	35	12VDC
5	Tuidreke	17 22 42.72 S	178 01 31.48 E	Free standing	35.6	12VDC
6	Kavukavu	17 58 07.73 S	177 17 53.23 E	Free standing	20	12VDC
7	Butoni	18 05 50.51 S	177 30 46.65 E	Triangular mast	25	12VDC
8	Delaikoro	16 36 33.08 S	179 14 40.39 E	Free standing	30	12VDC
9	Lokalevu	18 11 13.74 S	177 50 05.40 E	Free standing	24	12VDC

Figure 5: Repeater site information.

12. Proposed Setup

EFL intends to implement an IP Based SCADA radio to facilitate the proposed design below.

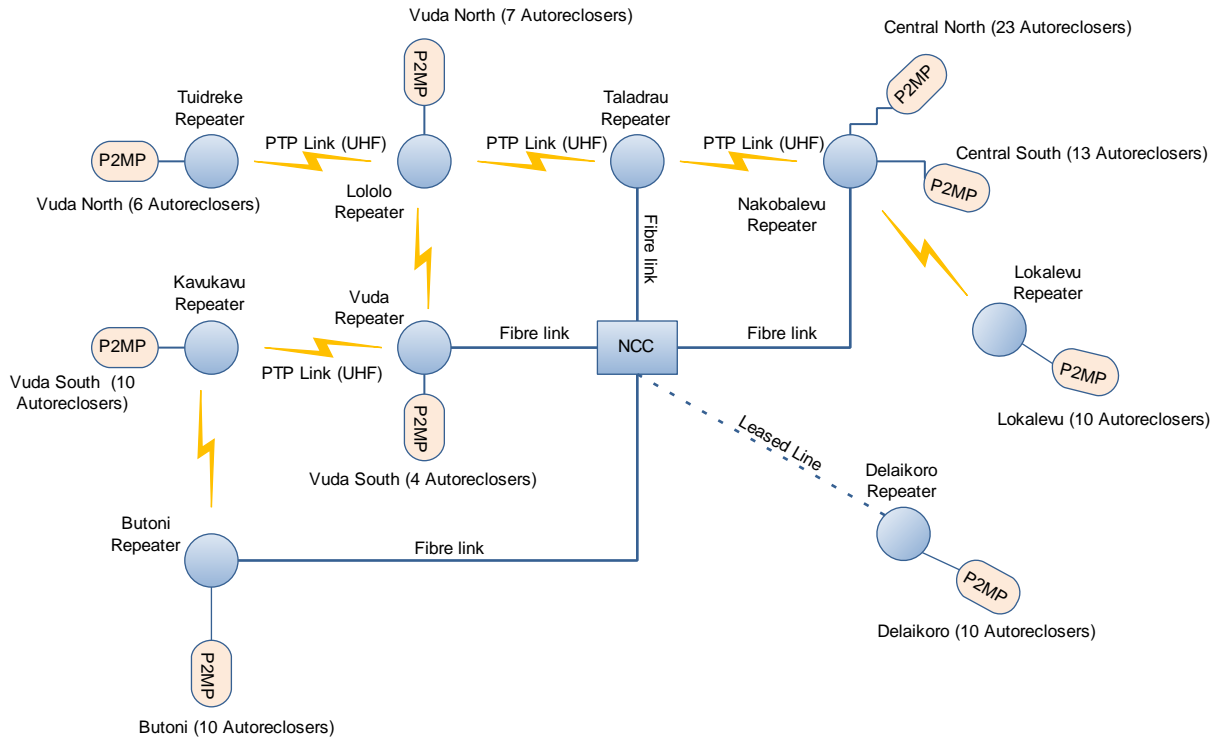


Figure 6 - Proposed SCADA Radio Network Layout

Bidders shall offer radio solution that meets the functional requirements and technical specifications in order to successfully meet the network layout in Figure 6 above.

13. System Parameters

13.1. Radio

	Radio Specification	Compliance (YES/No)
1	The drop or Point to Multipoint radio must operate in the VHF high band (148 – 174 MHz).	
2	Complete IP capability – Layer 2 Bridge, Layer 3 routing with automatic WAN configuration & automatic routing table creation, VLANs, Quality of Service and SNMPv3 support.	
3	Complete and effective Security platform that will safeguard the radio.	
4	Must have better modulation to ensure sufficient bandwidth to cater for its intended traffic.	
5	Must have the capability to select modulation based on Signal to Noise Ratio (SNR).	
6	The radio shall have the capability to ensure that all remote radios in the network can be 100% interrogated and configured via the Base radio.	
7	The radio must have the IP Filtering capability to block unwanted traffic originating with connected IP devices, including laptops.	
8	Radio shall be rated for 12V DC operation and hot swappable.	
9	Radio shall have the ability to cope with harsh conditions especially high temperatures without use of fans.	
10	The radio shall come with 3 Ethernet and 1 serial Interface. Ethernet shall be IPV4 supported.	
11	The radio shall have the capability to support remote firmware update.	

12	The radio shall come with programmable bandwidth of 12.5, 25, 50kHz and has 100kHz future capability.	
13	Radio shall have very high modulation schemes.	

13.2. Telecommunication Cabinet Specification

	Requirements	Compliance (YES/NO)
1	All telecommunication cabinets shall be designed for housing the 19" equipment	
2	All telecommunication cabinets shall have provisions for all necessary cabling for the connection of grounding cables.	
3	Due to the technical room dimensions, all 19" telecommunication cabinets prepared for housing Tx and Rx radio equipment shall be maximum 42RU high	
4	The equipment cabinet shall be professionally made. EFL would prefer Rittal cabinet with 2 fan installed on top of the rack. 24 x 19inch, (2000H x 800W x 600D), Rittal Cabinet. The Rittal cabinet shall be preinstalled with 4 x 12V D.C. and 4 x 24VDC miniature circuit breakers at the front bottom section of the cabinet. Unused front space shall be fitted with 19" blanking panels. The cabinet shall be installed with appropriate light on the inside top rear end of the cabinet and shall automatically switch ON when the door is opened. The cabinet shall be accessible from front and rear. The front door to be transparent (viewing door Aluminium). The base plate shall contain holes with cable gland for running of communication cables. The PVC square wiring duct shall be preinstalled on both sides of the cabinet for running the communication cables to the cable management bar which shall be preinstalled below the location of the radio. The cabinet shall come with plinth of minimum height of 100mm. The cabinet shall be fully assembled when delivered.	
5	Unused space in the front part of the cabinet shall be fitted with 19" blanking panels.	

14. Radio Coverage Requirements

The proposed radio network must cover the territory highlighted in the map below and offer an extended coverage of at least 10 – 30 km around the repeater broadcasting site.

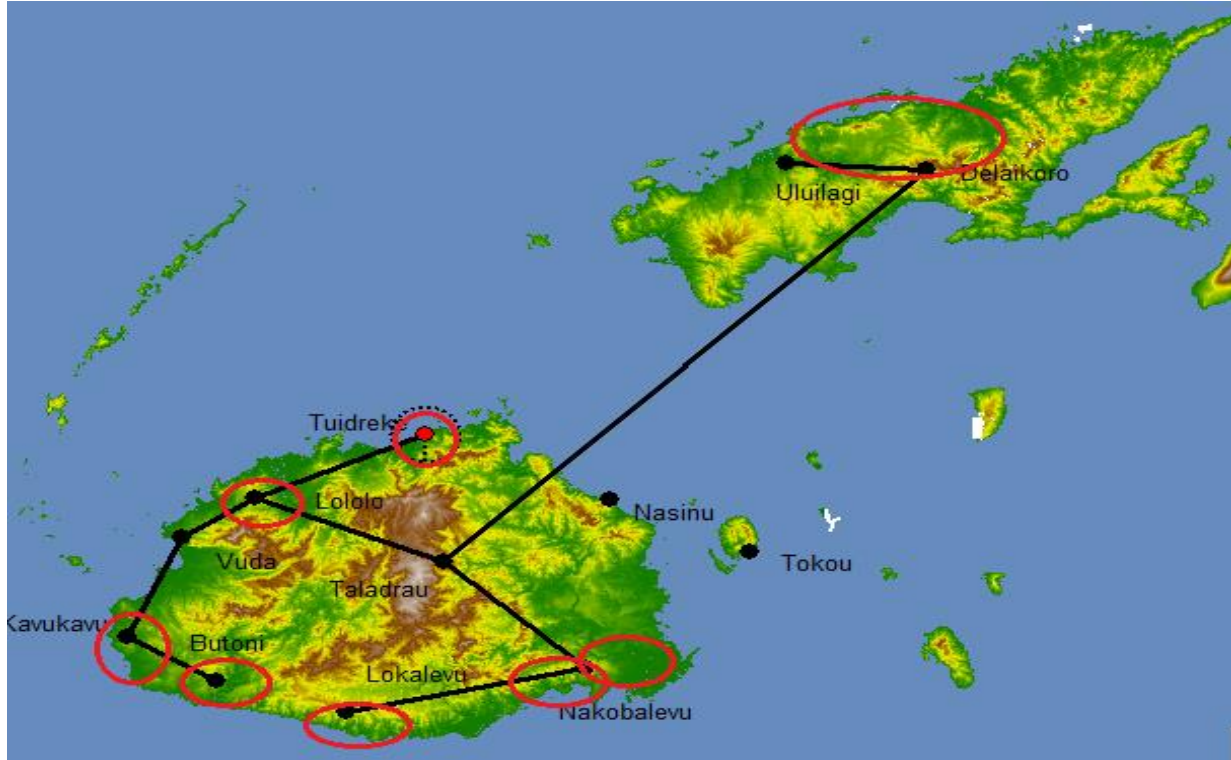


Figure 6 – Coverage area and repeater locations

15. Number of Autorecloser to be Monitored

The number of Autorecloser connected to the SCADA radio network is tabulated below together with those that we intend to connect. All these radios (210) shall be supplied together with proper data and test sheet. These radios shall be small in size and shall be mounted inside the NOJA Autorecloser outdoor cabinets mounted on power poles.

Repeater	Bearer	No of Autorecloser connected	Yet to be connected
Nakobalevu	Central North	23	20
	Central South	13	20
Lokalevu	Lokalevu	4	15

Vuda	Vuda South	4	15
Butoni	Butoni		20
Kavukavu	Vuda South	10	20
Tuidreke	Vuda North	6	20
Delaikoro	Delaikoro		25
Total		60	150

16. Project Timeline

Bidders are required to submit a detail Project Management Plan on how they intend to carry out the required work based on the scope of works provided, i.e., production, assembly and delivery. Failure to provide Project Management Plan will render your bid disqualified.

17. Cost Details

Bidders shall use the table below to list summary of cost associated with this tender. For **OVERSEAS** bidders their prices must be **quoted in their currency with CIF freight term** and the port of delivery is **Lautoka**. For **LOCAL** bids only, price must be quoted in FJD (VIP)

#	Description	Quantity	Total (CIF)
1	Radio – Repeater (VHF)	9	
2	Radio (VHF) – client	160	
3	Telecommunication Cabinets (Rack)	9	
4	Freight [Sea freight]	1	
	Total [CIF, LAUTOKA]	-	

Training

EFL may decide to engage the bidder in providing two day training at two locations for its technical staff. The cost shall comprise of instructor's travel expenses, accommodation, meals, local travel, training and any other expense. Training room will be provided by EFL.

#	Description	Days	Currency, Total
1	Training: 2 days at EFL Lautoka	2	
2	Training: 2 days at EFL Kinoya, Suva	2	
	Total	-	

NOTE: 1. LABOUR COST WILL ATTRACT 15% WITHHOLDING TAX AS PER FIJI'S TAX LAWS

The withholding Tax component shall be borne by the bidder and shall be catered for in their bid pricing.

Preferred Supplier Option

Bidders who also want to engage into contract for preferred supplier of client radios and willing to maintain the price for either 1 year, 3 years or 5 years are to fill the table below.

Contract Period: _____ years

#	Description	Quantity	Total (CIF)
1	Radio (VHF) – client	5	
2	Freight [Air freight]	1	
	Total [CIF, Nadi Airport]	-	

18. Contract Payment Terms

EFL's contract payment terms is payment to be made within 30 days from the date when invoice is received subject to the full delivery of ordered goods and service as per contract. If this is not accepted, Letter of Credit and Advance Payment are also accepted. The cost of arranging Bank guarantee or Letter of Credit shall be the responsibility of the bidder. Failure to accept the above payment terms will render your bid non-compliance.

Contract payments will be made according to the table below.

Payment Details	Description	Percentage payment
Payment	Successful delivery of all equipment's as per tender requirements or after successful delivery of training.	100%

19. Eligibility / Selection Criteria Of The Bidder

The supplier should be a manufacturer, authorized distributor or authorized reseller of the products.

The vendors shall submit the names/contacts of utilities or projects where they have previously supplied similar products.

All relevant test reports, product standard certificates, and product specification as a table form / drawings are required to be supplied in the tender as part of their bid.

Other information to be provided by the Bidder as part of the proposal is:

1. Manufacturer's / Vendor's warranty on the product.
2. Method of replacement or reimbursement of faulty / defective or damaged goods
3. Lead time including manufacturing time and shipping duration.
4. The bidder must provide the weight or CBM of the products
5. Previous EFL experience with the Bidder and supplier DIFOTIS (Delivery in Full on Time in Spec)
6. It is mandatory for the Bidders to provide full specification of the all Equipment prescribed in this bid.
7. The bidder should provide a 'Quality Assurance Certificate' (QAC) from the manufacturer stating that this equipment supplied is in conformity with the specifications requirements in the Tender.

20. Delivery

All required equipment & accessories shall be addressed to **Telecom Workshop, Energy Fiji Limited Navutu, Lautoka, Fiji.**

21. Bidder Details

The Bidder shall provide all the necessary information specified in the tables below:

General
The registered name of the Bidder:
Business address for correspondence: <i>(Location, Street , Locality City, Pin Code, Country, Telephone, Facsimile, Email Other)</i>
Contact name of the Authorised Person:
Contact's position: Contact addresses if different from above <i>Locality City, Pin Code</i> <i>Location, Street, Country, Telephone, Facsimile, Email, Web address</i>
Business structure:
Include the organisations years of experience in this field and reputation in the market place.

22. Other Value Added Services

The bidder is open to include any other information that may add value to their product or after installation and commissioning services.

23. Technical Support

- i. Bidder should provide details of what technical support is available to EFL to make better use of product.
- ii. Include relevant manuals and instructions for proper care and handling of the equipment and accessories, and operations.

24. Product Information

Bidders must include the following document together with their Bid:

- Full Product Specification
- Relevant Test Certificates
- Standard Compliance Certificate.

25. Package Size

The successful bidder will be required to pack and dispatch the item as per EFL's requirement. The package size and quantity will be determined by EFL unless the product is a standard factory package. All packages must be clearly marked with the quantity content in the crate or pallet. The bidder must ensure proper and suitable packing of the item before dispatch to avoid damages during transit.

26. Defects Warranty Period

All goods shall be supplied with a Warranty Period of **not less than 12 months** from the date of the receipt of the Goods by EFL. During the Warranty Period, defective parts shall be returned to the supplier for replacement on a pick-up exchange and return-delivery basis.

27. Price Validity

The price submitted shall remain valid for acceptance within 120 days from the date of opening of bids and bidders shall not withdraw or amend their proposal prior to the expiration of the validity period. Price Validity of more than 120 working days is highly accepted.

In exceptional circumstances prior to expiry of the original validity period, the Authority may request the supplier for an extension in the period of validity. The request and the response thereto shall be in writing. A supplier agreeing to the request will not be permitted to amend his tender price.

EFL will enter into contractual agreement with the successful bidder for the supply and delivery of radio and repeater radios to replace our obsolete SCADA radio network.

28. Payment Terms

As per EFL's payment policy, payment will be made within 30 days after the invoice has been received after goods have been delivered in full as per contract requirement. If this is not accepted, then a Letter of Credit and bank guarantee is also accepted. Advance payment will require a bank guarantee to be arranged. For Advance payment, the following condition applies:

- 1) Amount of bank guarantee must be equal to the advance payment contract
- 2) Issued to designated bank in Fiji accepted by EFL
- 3) Banker of supplier must liaise with banker of EFL
- 4) Validity of bank guarantee as per the contract terms and conditions
- 5) Bank guarantee should be irrevocable & non-negotiable until expiry date and satisfactory delivery of goods and services
- 6) The supplier's banker shall meet and satisfy the terms and conditions of the designated banker of EFL to ensure Bank guarantee is issued.
- 7) The cost of arranging Bank guarantee or Letter of Credit shall be responsibility of the successful bidder

29. Tender Evaluation

After the bids are received, it will go through a normal tender evaluation process as per EFL's Tender Policy and Procedures. The successful and unsuccessful bidders will be advised of the outcome after completion of the Tender evaluation process.

The evaluation of the tender submissions will be weighted as such:

No.	Components	Weighting (%)
1	Financial Components	35 %
2	Technical capability	45 %
4	Proven background on Products offered and ability to provide backup support	10 %
5	Product offered have been widely deployed in similar environment	10%

30. Submission of Tender

30.1. Bidders

Electronic copies of the **document/files** for the tender bid must be clearly numbered and named.

Electronic copies of the tender bid must be uploaded in the **TENDER LINK** Electronic Tender Box no later than **4:00pm, on Wednesday 10th June, 2020**.

To register your interest and tender a response, view 'Current Tenders' at:
<http://www.efl.com.fj/contractors-suppliers/tenders/current-tenders/>

For further information contact The Tender Committee, by e-mail Abduln@efl.com.fj.

The offer letter shall be addressed to:

- **Tender – MR 111/2020 – Tender for Supply of Digital Radio and Cabinet for SCADA Network**

**The Secretary, Tender Committee
Energy Fiji Limited
Supply Chain Office
Private Mail Bag
Suva**

Tenders received **after 4:00pm** on the closing date of **Wednesday 10th of June, 2020** will **not be considered**.

Lowest bid will not necessarily be accepted as successful bid.

For further information or clarification please contact our Supply Chain Office on phone **(+679) 3224360** or **(+679) 9991587**.

31. Compulsory Submission Forms

31.1. Submission Forms

The following information has to be filled by the bidder and submitted with Tender Documents:

1. Company Name: _____
2. Director/Owner(s): _____
3. Postal Address: _____
4. Email Address: _____
5. Phone Number: _____
6. Fax Number: _____
7. Office Location: _____
8. Facsimile & Skype: _____
9. Web Address: _____
10. After Sales Contact details: _____

11. TIN Number (local bidders only): _____
12. Company Registration Number(local bidders only): _____
13. FNPF Employer Registration Number (local bidders only): _____
14. Number of Branches & locations: _____
15. Years of Experience & reputation in the market : _____

16. Area of business Specialization: ☐ Manufacturer & Supplier
[Please tick where applicable] ☐ Retailer
☐ Licensed Agent
☐ Others, please specify _____

17. Business Structure :

I hereby, declare that all the above information is correct.

Sign: _____
 Name: _____
 Position: _____
 Date: _____

General Requirement

#	<u>General Requirement</u>	Describe in detail by citing evidence such as document number, clause and page number(s).
a).	Warranty details and warranty period of each item included.	
b).	Date of Manufacture stated.	
c).	Willing to accept Purchase Order and provide a minimum of 30days credit account.	
c).	Willing to accept payment within 30days after delivery of items to EFL.	
d).	Does not require advance payment.	
e).	Be able to provide back up support and spare parts.	
f).	Delivery time frame stated the Project Plan.	
g).	Proven that the product supplied has been deployed and used in similar application.	
h).	Validity period of the price.	
i).	Letter from Manufacturer to state that the bidder is the authorised distributor or reseller of product offered.	
j).	Any other Value Added Services.	

Technical Requirement: Rittal Cabinet

#	Requirements	Describe in detail by citing evidence such as document number, clause and page number(s).
1.	All telecommunication cabinets shall be designed for housing the 19" equipment	
2.	All telecommunication cabinets shall have provisions for all necessary cabling for the connection of grounding cables.	
3.	Due to the technical room dimensions, all 19" telecommunication cabinets prepared for housing Tx and Rx radio equipment shall be maximum 42RU high	
4.	The equipment cabinet shall be professionally made. EFL would prefer Rittal cabinet with 2 fan installed on top of the rack. 24 x 19inch, (2000H x 800W x 600D), Rittal Cabinet. The Rittal cabinet shall be preinstalled with 4 x 12V D.C. and 4 x 24VDC miniature circuit breakers at the front bottom section of the cabinet. Unused front space shall be fitted with 19" blanking panels. The cabinet shall be installed with appropriate light on the inside top rear end of the cabinet and shall automatically switch ON when the door is opened. The cabinet shall be	

	accessible from front and rear. The front door to be transparent (viewing door Aluminium). The base plate shall contain holes with cable gland for running of communication cables. The PVC square wiring duct shall be preinstalled on both sides of the cabinet for running the communication cables to the cable management bar which shall be preinstalled below the location of the radio. The cabinet shall come with plinth of minimum height of 100mm. The cabinet shall be fully assembled when delivered.	
5.	Unused space in the front part of the cabinet shall be fitted with 19" blanking panels.	

Technical Requirement: Radio

#	<u>Technical Requirement</u>	Describe in detail by citing evidence such document number, clause and page number (s).
a).	Brand	
b).	Country of Manufacture	
c).	Data sheet and specification for all equipment provided in the bid	
d).	The drop or Point to Multipoint radio must operate in the VHF high band (148 – 174 MHz).	
e).	Complete IP capability – Layer 2 Bridge, Layer 3 routing with automatic WAN configuration & automatic routing table creation, VLANs, Quality of Service and SNMPv3 support.	
f).	Complete and effective Security platform that will safeguard the radio.	
g).	Must have better modulation to ensure sufficient bandwidth to cater for its intended traffic.	
h).	Must have the capability to select modulation based on Signal to Noise Ratio (SNR).	
i).	The radio shall have the capability to ensure that all remote radios in the network can be 100% interrogated and configured via the Base radio.	
j).	The radio must have the IP Filtering capability to block unwanted traffic originating with connected IP devices, including laptops.	
k).	Radio shall be rated for 12V DC operation and hot	

	swappable.	
l).	Radio shall have the ability to cope with harsh conditions especially high temperatures without use of fans.	
m).	The radio shall come with 3 Ethernet and 1 serial Interface. Ethernet shall be IPV4 supported.	
n).	The radio shall have the capability to support remote firmware update.	
o).	The radio shall come with programmable bandwidth of 12.5, 25, 50kHz and has 100kHz future capability.	
p).	Radio shall have very high modulation schemes.	

31.2. Check List

No.	Item
1.	Offer Letter
2.	Overall Bid
3.	Cost
4.	Submission Forms
5.	Data Sheet for Radios
6.	Specification/Data Sheet for Telecommunication Cabinet.
7.	Letter: authorized manufacturer/distributor/ reseller of radios
8.	Letter: authorized manufacturer/distributor/ reseller of Rittal cabinet
9.	List of places and companies where the radio has been deployed in an electrical utility environment mainly in Australia & NZ by the bidder.
10.	Contact details for reference check of past radio deployment stated in item (9) above.
11.	Appendices: Any other information and Value Added Service.

TENDER SUBMISSION CHECK LIST

The Bidders must ensure that the details and documentation mention below must submitted as part of their tender Bid

Tender Number _____

Tender Name _____

1. Full Company Name: _____

(Attach copy of Registration Certificate)

2. Director/Owner(s): _____

3. Postal Address: _____

4. Phone Contact: _____

5. Fax Number: _____

6. Email address: _____

7. Office Location: _____

8. TIN Number: _____

(Attach copy of the VAT/TIN Registration Certificate - Local Bidders Only)

9. Company Registration Number: _____

(Attach copy of the Business License)

10. FNPF Employer Registration Number: _____

(For Local Bidders only)

11. Contact Person: _____

I declare that all the above information is

correct. Name: _____

Position: _____

Sign: _____ Date: _____

Tender Submission - Instruction to bidders

It is mandatory for Bidders to upload a copy of their bid in the TENDER LINK Electronic Tender Box no later than 4.00pm (1600hrs Fiji Time) Wednesday 10th June, 2020.

To register your interest and tender a response, view 'Current Tenders' at:
<https://www.tenderlink.com/efl>

For further information contact The Secretary Tender Committee, by e-mail
TDelairewa@efl.com.fj

In additional, hard copies of the tender, one original and one copy must be deposited in the tender box located at the EFL Head Office, 2 Marlow Street, Suva, Fiji no later than new time and date to be inserted - Addressed as

Tender - MR 111/2020 - Supply of Digital Radio & Cabinet for SCADA Network

The Secretary Tender Committee

Energy Fiji Limited

Head Office

Suva

Fiji

Hard copies of the Tender bid will be accepted after the closing date and time provided a soft copy is uploaded in the e-Tender Box and it is dispatched before the closing date and time.

Tenders received after closing time 4.00pm (1600hrs Fiji Time) Wednesday 10th June, 2020.

- Will not be considered.
- Lowest bid will not necessarily be accepted as successful bid.

It is the responsibility of the bidder to pay courier chargers and all other cost associated with the delivery of the hard copy of the Tender submission.

(Tender Submission via email or fax will not be accepted)